UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,902	03/12/2004	Jae Yeong Park	2080-3236	8316

7590 12/18/2006

LEE & HONG
801 S. Figueroa Street
Suite 1300
Los Angeles, CA 90017-5569

EXAMINER	
LE, HOANGANH T	
ART UNIT	**PAPER NUMBER**
2821	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/18/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/799,902	JAE YEONG PARK	
	Examiner	Art Unit	
	HoangAnh T. Le	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Hoanganh Le
Primary Examiner

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The RCE filed on October 23, 2006 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 17 recite "one high resistance substrate that is essentially non-conductive". Is it a dielectric substrate? The term "high resistance" is indefinite. How high? And what material?

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-6,15-20, and 27- 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki et al (the US Patent No. 5,400,039, cited by Applicant).

The Araki et al reference teaches in figures 1-3 an antenna system comprising: an antenna 23-25 for receiving a signal, a low noise amplifier 31A for amplifying a signal

received through the antenna so as to minimize a noise generation, and a phase shifter 26 for controlling a phase of the amplified signal, wherein the antenna 23-25, the low noise amplifier 31, and the phase shifter 26 are formed on one high resistance substrate 21.The high resistance substrate is preferably selected among a high resistance silicon substrate, a high resistance ceramic substrate, and a printed circuit board (PCB). The high resistance substrate is a substrate of two surfaces having signal electrodes for connecting upper and lower surfaces thereof (figure 1): The antenna is one between a patch antenna and a slot antenna (figure 2A). The phase shifter is constituted with signal electrodes, ground electrodes, inductors respectively formed of the same conductive material, and an electron switch and a capacitor connected to the signal electrodes (col. 6, lines 29-col. 9, line42). The inductor is formed as a strip line structure or a spiral structure by a micro electro mechanical system (MEMS) technique (figure 2).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 7-14 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araki et al (cited above) in view of Ohata et al (the US Patent No. 6,320,543, cited by Applicant).

The Araki et al reference teaches every feature of the claimed invention, excluding the electron switch being formed as a bare chip form that is connected to the signal electrodes by a bonding wire, the electron switch further includes a polymeric protection material), the electron switch is formed at an etched part of the high resistance substrate after partially etching the high resistance substrate, the electron switch is formed as a bare chip form connected to the signal electrodes by a flip chip bonding technique, the low noise amplifier is formed as a bare chip form connected to the signal electrodes by a bonding wire, the high resistance substrate is a low temperature co-fired ceramic PCB.

The Ohata et al reference teaches in figures 1A-3C 7A and 7B a electron switch being formed as a bare chip form that is connected to the signal electrodes by a bonding wire (figure 2A). The electron switch further includes a polymeric protection material (igure 2B). The electron switch is formed at an etched part of the high resistance substrate after partially etching the high resistance substrate. The electron switch is formed as a bare chip form connected to the signal electrodes by a flip chip bonding technique. The low noise amplifier is formed as a bare chip form connected to the signal electrodes by a bonding wire (figure 2). The high resistance substrate is a low temperature co-fired ceramic PCB (col. 4, lines 24-29).

Since one of ordinary skill in the art would recognize the benefit of improving the characteristics of the antenna, it would have been obvious to provide Araki with the electron switch being formed as a bare chip form that is connected to the signal electrodes by a bonding wire, the electron switch further includes a polymeric protection

material), the electron switch is formed at an etched part of the high resistance substrate after partially etching the high resistance substrate, the electron switch is formed as a bare chip form connected to the signal electrodes by a flip chip bonding technique, the low noise amplifier is formed as a bare chip form connected to the signal electrodes by a bonding wire, the high resistance substrate is a low temperature co-fired ceramic PCB as taught by Ohata et al.

Response to Arguments

8. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HoangAnh T. Le whose telephone number is (571) 272-1823. The examiner can normally be reached on 8:00am-4:30pm.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hoanganh Le
Primary Examiner